

REMARKS

By this amendment, claims 7, 8 and 34, 35 are cancelled without prejudice, claims 1, 2, 4, 9, 12, 18, 23, 24, 30, 31, 39, 43, 44, 45 and 53 are amended and along with claims 3, 5, 6, 10, 11, 13-17, 19-22, 25-29, 32, 33, 36-42, 46-52, 54-56 are submitted for reconsideration in view of the remarks following.

In the Office Action, the Examiner rejected claims 1-3, 7, 9-12, 19, 20, 23, 24, 26, 38-41, 43, 51-53 under 35 USC 102(b) as anticipated by Quan et al. (US 5,194,965); and rejected claims 4, 27, 28, 30-32, 34 under 35 USC 103(a) as unpatentable over Quan et al. (US 5,194,965).

Applicant notes with appreciation the allowance of claims 5, 6, 8, 13-18, 21, 22, 25, 29, 33, 35-37, 42, 44-50, 54-56 if rewritten in independent form including all the limitations of the base claim and any intervening claims.

With regards to the rejections of claims under 35 USC 102(b) and 35 USC 103(a) over Quan et al. ('965)(hereinafter Quan), applicants respectfully submit that Quan fail to anticipate, or make obvious the features of the present invention as disclosed in the specification and set forth for example in the amended independent claims 1, 23, 43, 53 and the claims dependent thereon.

To illustrate, Quan disclose a system for disabling copy protection signals such as for example pseudo sync and/or AGC pulses. In the course of performing such a disabling process, Quan disclose locating the vertical blanking intervals (VBI) in which the copy protection pulses are located. However, the concept in Quan for generating the vertical or frame rate signal, is completely different than the concept of the present invention and thus Quan fail to anticipate or make obvious the claimed features of the present invention.

More particularly, Quan disclose circuitry wherein a video signal is supplied to a sync separator formed of components 44, 48, 49, which in turn supplies a composite sync signal to a low-pass filter (LPF) formed of resistor 52, inductor 54 and capacitor 56. The LPF outputs a first vertical rate pulse indicative of the vertical blanking intervals (VBI) of the video signal. It follows that the LPF acts as an integrating circuit that looks for the broad vertical sync pulses which occur in the vertical sync interval. That is, unlike the process of the present invention, Quan provide a LPF which integrates the duration of the broad vertical sync tips of the vertical sync signal. This prior art is specifically discussed in the present application on page 2, lines 5-10 and is the process that the present invention replaces. Contrary to the Examiner's contentions, the Quan process does not look for specific time intervals which occur in accordance with particular characteristics of signals in the VBI. Further, Quan fails to suggest that specific sync pulses have uniquely consistent time intervals within the VBI of a standard video signal due to the particular characteristics of signals in the VBI.

Contrary to the use of a LPF which integrates the longer duration of broad vertical sync tips, as disclosed in Quan, the claimed invention extracts a vertical sync signal using a different concept which does not employ a filter circuit or the process of integration.

More particularly, the claimed invention looks for unique time intervals between specifically selected pulses, or looks for a specific width of a selected sync pulse, wherein the time intervals between the selected pulses or the width of a specific sync pulse is due to particular characteristics of signals in the VBI which are set by the television standard. For example, the invention looks for a specific time interval between edges of pulses wherein the specific time interval is unique to the specific pulses in the vertical sync signal and thus is indicative of the presence of the vertical rate (sync) signal.

It follows that the passages cited by the Examiner as disclosing the features of the claimed invention (viz, Col. 2, line 63 to Col. 3, line 8 and Col. 4, line 56 to Col. 5, line 6) fail to disclose any means or process for sensing a time interval which occurs between pulses or selected edges of pulses, or which sense a unique pulse width, which occur in the VBI. To illustrate, the passage spanning Col. 2 to Col. 3 merely discusses means for level shifting copy-protect signals, such as pseudo sync or AGC pulses which occur in the VBI, an amount which enables acceptable copying of a video signal. The Quan process includes the conventional process of generating timing signals to locate the occurrence of the copy protect signals which are to be level shifted. The passage also includes mention that the detection of the copy protection signals can be made by detecting the VBI rather than the copy protection signals themselves.

Ergo, Quan fails in any way to suggest or disclose applicant's claimed invention of sensing a time interval which occurs in accordance with particular characteristics of signals in the VBI as set forth for example in claims 1, 23, 43 and 53.

Likewise, the passage cited by the Examiner spanning Col. 4 to Col. 5 discloses that the LPF integration of the composite sync signal provides a first vertical rate pulse indicative of the VBI (Col. 4, lines 59-62) and fails to disclose sensing time intervals which occur in accordance with particular characteristics of signals in the VBI. The first vertical rate pulse is supplied to a comparator 58 which outputs a second vertical rate pulse of a predetermined voltage level to first and then second one-shot circuits 60, 62, respectively, to produce a final pulse that extends for a plurality of lines in the VBI (Col. 4, line 66 to Col. 5, line 6). It may be seen that the first and second pulses generated by first and second one-shots in Quan are not indicative of time

intervals which occur in accordance with particular characteristics of signals in the VBI. That is, time intervals which occur between specific pulses or over specific pulse widths in the VBI.

Claim 1: Accordingly, with respect particularly to the 102 rejection of claim 1, applicant respectfully submits that Quan fail to suggest or intend sensing a time interval which occurs in accordance with particular characteristics of signals in video lines in the VBI, as recited in amended claim 1. Col. 5, lines 1-6 referenced by the Examiner simply describes the use of series one shot circuits 60, 62 to generate a signal which extends from about lines 10 through 20 in the VBI. The reliable vertical rate signal fed to the series one shot circuits had already been generated by a low-pass filter (52, 54, 56). The use of a low pass filter to generate a vertical rate pulse is the same process as the prior art process mentioned in page 2, lines 5-10 of the present application.

To the contrary, the novel techniques disclosed in the present application comprise unique, alternative ways of determining a reliable vertical rate pulse other than by the traditional use of low pass filtering following a sync separator output. The traditional technique identifies the longer broad vertical sync pulses via an integration process. It follows that Quan do not disclose or even suggest the applicant's concepts, which rely on determining (sensing) specific time periods or intervals between certain sync pulses in the VBI; that is, different time intervals which occur in accordance with particular characteristics of the signals within the VBI.

On page 2 of the present application, the discussion on lines 8 to 10 illustrate the traditional manner disclosed in Quan, in which a reliable vertical rate pulse is produced: "In a typical technique circuits are used to identify the characteristically longer broad vertical sync pulses to generate a vertical (or frame) rate signal." This identification is done via low pass filtering since the video signal is comprised of a composite sync signal, which contains the

vertical sync signal, which contains broad vertical sync pulses. Therefore, since there is a vertical sync signal present in the video signal as stated on page 2 lines 5 to 7 of the application, a sync separator that outputs the broad pulses to a low pass filter will then deliver timing signals. These timing signals comprise the desired vertical rate signal.

More particularly, Quan Figure 1, shows that composite sync supplied from buffer 50 is coupled to the low pass filter L1 and C4. The output of the low pass filter then produces a vertical rate pulse based on integrating the broad vertical sync pulses. This vertical rate pulse then shows a larger or different amplitude waveform coincident with the broad pulses with respect to all other sync pulses. The comparator 58 then “slices” the low pass filtered composite sync waveform to form the reliable vertical rate signal in the conventional way.

Continuing, Quan therefore fails to generate a vertical/frame rate signal in response to a sensed time interval since (1) Quan fails to sense a time interval as discussed above, and (2) Quan generates his vertical/frame rate signal by means of a low-pass filter which is well known prior art.

Applicant refers to disclosures in, for example, published books such as “Basic Television and Video Systems” by Bernard Grob, page 315, McGraw-Hill Book Co., and “Colour Television” by Geoffrey H. Hutson, et al., pages 261-263, McGraw-Hill Book Co. Both books describe using integration or low pass filtering of sync pulses to detect the presence of broad vertical sync pulses, such as disclosed in Quan.

The Examiner also contends with regards to claim 1, that Quan discloses “generating a vertical/frame rate signal in a desired location in the VBI in response to the sensed time interval...” (underlined for emphasis), and references the passages in Quan on Col. 2, line 62 to Col. 3, line 8 and Col. 4, lines 62-67.

As discussed above, Quan fails to disclose sensing a time interval, in the manner disclosed and claimed in, for example, claims 1, 23, 43 and 53 of the present application. Thus, contrary to the Examiner's contention, Quan does not disclose that a vertical rate signal is generated in response to a sensed time interval, as is fully discussed above.

Clearly, the passage in Col. 2, line 62 to Col. 3, line 8 only discloses the use of level shifting as a way to produce an acceptable recording for a copy protected video signal. The passage discloses detecting the copy protection signal and then generating timing pulses to define a period to enable level shifting. Accordingly, it is obvious that the passage does not disclose generating a vertical rate signal in response to sensing a time interval which occurs in accordance with particular characteristics of signals in the VBI. The present claim 1 also does not claim detecting a copy protected signal as stated in the passage in Cols. 2-3.

Likewise, the passage in Col. 4, lines 62-67 discloses that, the vertical rate pulse is generated via a low pass filter or integration of the composite sync signal. This integration is used to sense the arrival of broad vertical sync pulses. Thus, there is no sensing of a time interval which occurs in accordance with particular characteristics of signals in the VBI. Instead, this passage is similar in disclosure to the discussion in the present application, page 2, line 6, which describes the prior art technique of generating a vertical rate pulse via a low pass filter.

Claim 2: The Examiner states that Col. 4, line 62 to Col. 5, line 6 discloses selected edges of pulses occur in pre-equalizing and post-equalizing sync pulse or vertical sync pulse intervals of the VBI and implies these pulses are sensed in a time interval between selected edges. However, there is no mention of these sync pulses or how these pulses are sensed in the passage referenced by the Examiner.

The Examiner further cites Figure 3e of Quan as relevant to claim 2. However, Figure 3e instead shows a level shifted copy protection signal. In fact, the description of Figure 3e found in Quan Col. 3, lines 33-35 is, “FIGS. 3(a) through 3(e) are waveforms illustrating a method of level shifting...”.

Claim 3: The Examiner references the passage in Col. 4, lines 56-67 and contends that the passage is relevant in that a timing signal indicative of a vertical rate signal is produced. However, there is no mention in the passage in Col. 4 of sensing a time interval. To the contrary, the vertical rate pulse in Quan is achieved via low pass filtering. It follows that the passage does not disclose or suggest the features of the present claims 1 and 3.

Claims 23, 24, 26, 38-40: The Examiner cites Col. 2, line 68 to Col. 3, line 8 of Quan as disclosing “a processing circuit... for sensing selected pulse widths and/or pulse edge spacings...” However, the passage only discusses level shifting a video copy protection waveform. There is no mention of sensing a time interval which occurs in accordance with particular characteristics of signals in the VBI, as recited in amended claim 23. Furthermore, the Examiner cites Col. 4, lines 62-67, which however only states that a vertical pulse is generated by low pass filtering. As discussed previously, low pass filtering or identifying the broad vertical pulse to generate a vertical rate pulse is prior art which fails to suggest the claimed invention.

Claims 20, 41: The Examiner rejects claims 20 and 41 based on the disclosures in the passages in Col. 2, lines 59-68 and Col. 3, lines 1-8 of Quan. To the contrary, as discussed previously, these passages disclose using level shifting as a first embodiment of the Quan patent. There is no mention of sensing a time interval which occurs in accordance with particular characteristics of signals in the VBI and using the resulting vertical rate signal to reduce an effect

of a copy protection signal as is recited in claims 20 and 41 taken in combination with independent claims 1 and 23 respectively.

The Examiner also cites Col. 4, lines 62-67 of Quan against claim 41. However, as discussed above, this passage mentions the prior art method discussed in the present application, page 2, lines 5-10 using low pass filtering to identify the broad vertical sync pulse.

Claims 43, 51-53: These claims inter alia refer to modifying a video signal such that the unconventional method and apparatus recited in claims 1-42 for identifying a reliable vertical rate signal is prevented. This technique of modification is not disclosed or suggested in the passages in Col. 2, lines 62-68, Col. 3, lines 1-8, and Col. 4, lines 62-67 of Quan. As previously discussed, all of these passages refer to either level shifting a copy protection signal for reducing an effect on a copy protection signal, or to using a low pass filter to generate a vertical rate signal. There is no mention in Quan for modifying time intervals of signals in the VBI of a video signal, to cause unreliable detection of a vertical rate signal which has been generated by unconventional methods and apparatus such as those disclosed in the present application.

Regarding now the rejection under 35 USC 103(a) and in particular the rejection of: Claims 4 and 27, 28, 30-32, 34: The Examiner rejects these claims on the basis that the subject matter is "well known in the art," and that one skilled in the art would have been motivated to detect a time interval between H sync signals of about 32 microseconds +/-20% rather than the normal 64 microseconds.

Applicant respectfully submits that such a rejection is improper in that the Examiner is, in effect, dismissing the feature(s) of the claimed invention based on personal opinion. That is, the Examiner is rejecting features which lie at the heart of the invention with the argument that the features are well known to those skilled in the art. However, the Examiner has not submitted any

prior art upon which to base such an assumption. Applicant respectfully submits that it is improper to reject claims drawn to various respective features lying at the heart of the invention without the citation of references disclosing such features.

It is noted that the Examiner concurs in pages 3 and 4 of the Office Action that “Quan does not specifically disclose sensing the time interval between H sync pulses and detecting when the time interval between H sync signals is about 32 microseconds rather than normal 64 microseconds, which only occurs in the VBI.” The Examiner then rejects the claims 27, 38, 30-32 and 34 based on personal opinion that the features of the claimed invention are well known in the art, even though they are not disclosed or even suggested in Quan, the only prior art cited.

Furthermore, rejected claims 27 and 28 correspond to allowed claims 5 and 6, respectively, and accordingly should be equally allowable.

Applicant respectfully submits that the claims 1, 23, 43 and 53, particularly as amended, are patentable over the cited art to Quan for the reasons discussed above. Action in the form of allowance of claims 1-4, 9-12, 19-20, 23, 24, 26-28, 30-32, 38-41, 43, 51-53 along with allowable claims 5, 6, 13-18, 21, 22, 25, 29, 33, 36, 37, 42, 44-50, 54-56, is respectfully requested. As noted above, claims 7, 8 and 34, 35 have been cancelled without prejudice.

If the Examiner finds differences which could be resolved by telephone interview, applicant can be reached by phone at (408) 562-8496.

No additional fee is believed to be required; however, if there are any additional charges, please charge Deposit Account No. 13-0762.

Respectfully submitted,
MACROVISION CORPORATION

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Jim H. Salter (Reg. No. 35,668)

Macrovision Corporation
2830 De La Cruz Blvd.
Santa Clara, CA 95050
Telephone: 408 562-8496
Fax: 408 743-9659

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By: Barbara Skliba
(Type Name)